

January 1, 2014

Actuarial Valuation Report

Danvers Retirement Board

Lawrence B. Stone



stoneconsulting,inc

5 West Mill Street, Suite. 4
Medfield, Massachusetts 02052
T: 508.359.9600 • F: 508.359.0190
Lstone@stoneconsult.com



November 20, 2014

Danvers Retirement Board
Town Hall
1 Sylvan Street
Danvers, MA 01923

Dear Danvers Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2014 actuarial valuation of the Danvers Retirement System. This valuation and report was prepared using generally accepted actuarial principles and practices and meets the parameters set by the Governmental Accounting Standards Board Statement (GASB) No. 27. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system.

As part of performing the valuation, Stone Consulting, Inc. was furnished member data by the Danvers Retirement System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. In addition, the administrative staff furnished financial statements that were not audited by the actuary or by the plan's auditors.

The funding objective of the plan is to fully fund the system while attempting to maintain a stable contribution amount for the upcoming fiscal year that is consistent with prior funding schedules or if employer finances allow it, to increase the contribution amount. This funding objective is being met.

We anticipate over time the contribution level to decrease as a percentage of payroll, except for the first three years, where it is set to be 8% higher than the prior fiscal year. The contribution rate (except in the first three years) is determined by adding the normal cost plus an amortization of the unfunded actuarial accrued liability plus the net 3(8)(c) payment. The normal cost is expected to remain at a level percentage of payroll. The length of the funding schedule contained in this actuarial valuation report is twenty-one years (fully funded by 2036). The contribution is set to increase by 8.00% each year through FY 2018. The contribution in Fiscal 2019 and beyond is based on 4% amortization increases through Fiscal year 2036.

The amortization payments in the first three years are the amount left over after subtracting the net normal cost and the 3(8)(c) payments from the contribution amount.

The contribution amount for Fiscal Year 2016 is \$5,796,237 which is \$222,510 higher than the anticipated contribution amount from the prior funding schedule. PERAC and GASB guidelines indicate that actuarial valuations should be conducted at least every other year. The Danvers Retirement Board conducted their previous actuarial valuation effective January 1, 2012.

We are pleased to present the results of this valuation. If the Retirement Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in inaccurate or misleading understanding of the results.

I, Lawrence Stone, am a consultant for Stone Consulting, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.
Actuaries for the Plan

Lawrence B. Stone
Member, American Academy of Actuaries

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Introduction

This report presents the results of the actuarial valuation of the Danvers Retirement System. The valuation was performed at the request of the Retirement Board as of January 1, 2014 for the purpose of determining the contribution requirements for Fiscal Year 2016 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31, 2013
- The benefit provisions of M.G.L. Chapter 32 and related statutes;
- The demographics of members in the system (i.e., active and inactive participants, retirees and beneficiaries as of January 1, 2014);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, mortality, etc.)

January 1, 2014 Valuation Summary

| | January 1, 2014 | January 1, 2012 | Change |
|---------------------------------|--|---|-------------------|
| Contribution Fiscal 2016 | \$5,796,237 | \$5,573,727 | \$222,510 |
| Funding Schedule Length | 21 years | 21 years | 0 years |
| Funding Ratio | 55% (59% MVA Basis) | 59% | -3% (rounding) |
| Interest Rate Assumption | 8.00% | 8.00% | 0.00% |
| Salary Increase Rate Assumption | Ultimate Grp 1 & 2: - 4.00% Grp 4: - 4.25% Select: 3% in 2014 & 2015 Steps: Grp 1 & 2: 3.50% (first 5 yrs of service) Grp 4: 4.00% (first 4 yrs of service) Base rate reduced by .5% for years in which steps apply | Ultimate Grp 1 & 2: - 4.00% Grp 4: - 4.25% Select: 3% in 2012 & 2013 Steps: Grp 1 & 2: 3.50% (first 5 yrs of service) Grp 4: 4.00% (first 4 yrs of service) Base rate not reduced for years in which steps apply | |

- The Fiscal Year 2016 contribution is \$222,510 higher than the planned 2016 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using a five year asset smoothing method. In this approach, asset gains and losses are recognized over a five-year period. The purpose of this approach is to avoid wide swings in asset value from one year to the next.

The System experienced a 15.2% annual return on the market value of assets versus our assumption of an 8.00% return which resulted in an \$11.6 million net actuarial gain. The System's asset portfolio, effective December 31, 2013 is approximately 79% equities, alternative investments, hedge funds and real estate and 21% fixed income and short-term investments. The interest rate assumption was maintained at 8.00% to reflect anticipated market performance.

- The salary increase assumption is based on a similar select and ultimate table as the prior valuation except for a .5% reduction in the base rate for years in which steps apply. This change decreased the accrued liability by \$789,000. Total compensation changed by 6.9% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 0.3%. This assumption is based on expected future experience.
- The funding level of the Danvers Retirement System is 55% compared to 59% for the January 1, 2012 actuarial valuation. Using market value of assets the funding level is 59%.

The schedule length is twenty-one (21) years (which is the same as the remaining schedule from the prior valuation). The maximum period permitted under Section 22F of Chapter 32 of the Massachusetts General Laws is 26 years (2040).

The Fiscal 2016 contribution is 8.00% higher than the prior year contribution and increases annually at 8.00% for the next two years and then is adjusted for 4% amortization increases for the remaining 18 years. The schedule is further adjusted to reflect known deferred asset gains in FY 2018 and FY 2020.

- Non-economic assumptions were changed from the January 1, 2012 actuarial valuation. The mortality assumption is based upon the RP2000 Table increased with Generational mortality and Scale BB. The previous assumption used a 17 year projection with Scale AA. The net effect of this change increased the accrued liability by \$6.4 million.
- Projection using generational mortality produces a different mortality table for each year of birth. In this manner, the expected continued increase in how long a person lives is reflected. For example, a participant who is currently age 25 (and will not turn 65 for another 40 years) would be expected to live appreciably longer past 65 years of age than someone who is currently 65. Thus a superannuation retirement benefit starting in 2054 would be appreciably longer than a similar benefit beginning in 2014.

January 1, 2014 Actuarial Valuation Results

| | January 1, 2014 | January 1, 2012 | Percentage Change |
|--|--------------------|--------------------|----------------------|
| Funding | | | |
| Contribution for Fiscal 2016 | \$5,796,237 | | |
| Contribution for Fiscal 2016 based on current schedule | | \$5,573,727 | 4% |
| Members * | | | |
| ▪ Actives | | | |
| a. Number | 469 | 440 | 6.6% |
| b. Annual Compensation | \$24,485,565 | \$22,911,025 | 6.9% |
| c. Average Annual Compensation | \$52,208 | \$52,071 | 0.3% |
| d. Average Attained Age | 47.2 | 48.1 | -1.8% |
| e. Average Past Service | 12.4 | 13.7 | -9.7% |
| ▪ Retired, Disabled and Beneficiaries | | | |
| a. Number | 397 | 386 | 2.8% |
| b. Total Benefits* | \$9,658,486 | 8,426,334 | 14.6% |
| c. Average Benefits* | \$ 24,329 | \$21,830 | 11.4% |
| d. Average Age | 74.1 | 74.5 | -0.5% |
| ▪ Inactives | | | |
| a. Number | 79 | 54 | 46.3% |
| Normal Cost | | | |
| a. Total Normal Cost | \$3,164,384 | \$2,889,946 | 9.5% |
| b. Less Expected Members' Contributions | <u>2,199,710</u> | <u>2,048,640</u> | 7.4% |
| c. Normal Cost to be funded by the Municipality | \$964,674 | \$841,306 | 14.7% |
| d. Eighteen month adjustment | 62,147 | 54,199 | 14.7% |
| e. Adjusted Normal Cost and Expense | \$1,026,821 | \$895,505 | 14.7% |

*Excluding State reimbursed COLA

| | January 1, 2014 | January 1, 2012 | Percentage Change |
|--|--------------------|--------------------|----------------------|
| Actuarial Accrued Liability as of January 1, 2014 | | | |
| a. Active Members | \$69,990,176 | \$66,515,544 | 5.2% |
| b. Inactive Members | 899,322 | 681,806 | 31.9% |
| c. Retired Members and Beneficiaries | <u>91,310,279</u> | <u>75,958,082</u> | 20.2% |
| d. Total | \$162,199,777 | \$143,155,432 | 13.3% |
| Unfunded Actuarial Accrued Liability | | | |
| a. Actuarial Accrued Liability | \$162,199,777 | \$143,155,432 | 13.3% |
| b. Less Actuarial Value of Assets | <u>89,955,182</u> | <u>83,875,130</u> | 7.2% |
| c. Unfunded Actuarial Accrued Liability | \$72,244,594 | \$59,280,302 | 21.9% |
| d. Eighteen month adjustment | <u>\$4,876,580</u> | <u>\$3,671,511</u> | |
| e. Adjusted Unfunded Actuarial Accrued Liability | \$77,121,174 | \$62,951,813 | |

- The data was supplied by the Danvers Retirement Board. The data was checked under broad parameters for reasonableness. With the assistance of the staff of the Danvers Retirement Board, we were able to develop a database sufficient for valuation purposes.
- Payroll changed by 6.9% over the course of the past year. Average annual compensation changed by 0.3% over the same time period.
- The salary increase assumption includes general wage adjustments, step increases, and promotional increases.

History of Active Participants

| Valuation Year | Number | Average Age | Average Past Service | Average Annual Compensation |
|----------------|--------|-------------|----------------------|-----------------------------|
| 2014 | 469 | 47.2 | 12.4 | \$52,208 |
| 2012 | 440 | 48.1 | 13.7 | \$52,071 |
| 2010 | 464 | NA | NA | \$49,629 |
| 2009 | 460 | NA | NA | \$49,240 |

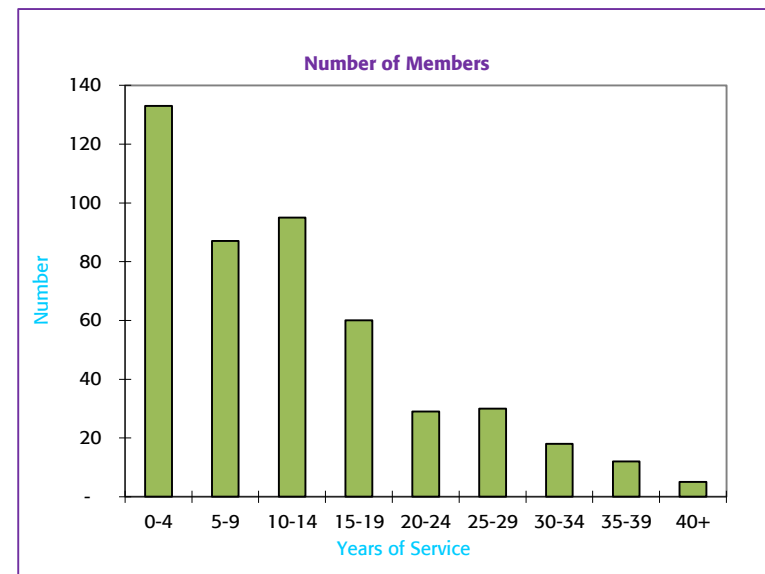
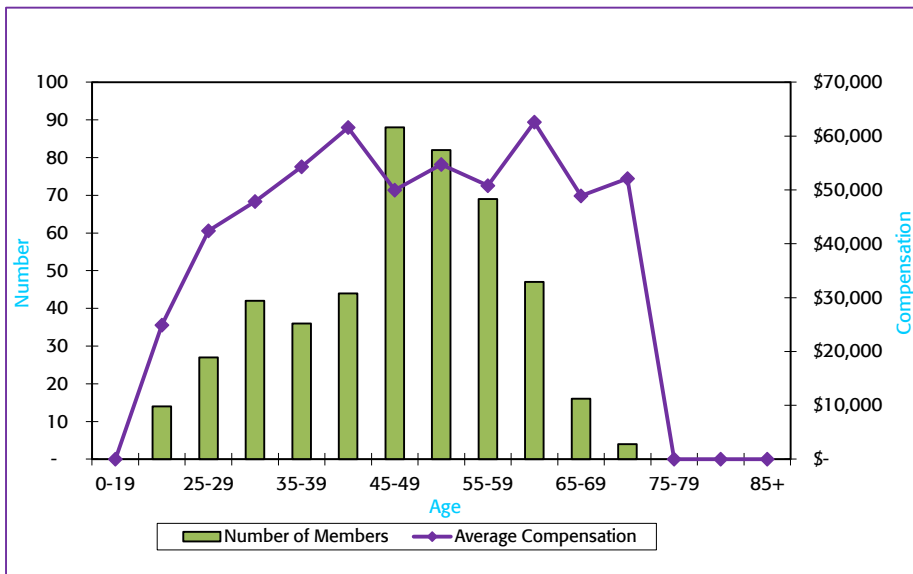
- Employee age has increased by .9 years and service has decreased by 1.3 years over the past two years. Average annual compensation has grown by 6.0% (1.2% annually) over the past five years.

The charts on the following pages summarize demographic information regarding active and retiree members.

Distribution of Plan Members as of January 1, 2014

Active Members

| AGE | 0-4 Years | 5-9 Years | 10-14 Years | 15-19 Years | 20-24 Years | 25-29 Years | 30-34 Years | 35-39 Years | 40 + Years | Total | Total Compensation | Average Compensation |
|--------------|------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|----------------------|----------------------|
| 0-19 | - | - | - | - | - | - | - | - | - | - | \$ - | \$ - |
| 20-24 | 14 | - | - | - | - | - | - | - | - | 14 | 348,374 | 24,884 |
| 25-29 | 24 | 3 | - | - | - | - | - | - | - | 27 | 1,144,796 | 42,400 |
| 30-34 | 26 | 14 | 2 | - | - | - | - | - | - | 42 | 2,009,402 | 47,843 |
| 35-39 | 9 | 10 | 12 | 5 | - | - | - | - | - | 36 | 1,954,400 | 54,289 |
| 40-44 | 8 | 10 | 11 | 13 | 2 | - | - | - | - | 44 | 2,709,837 | 61,587 |
| 45-49 | 27 | 14 | 12 | 14 | 13 | 7 | 1 | - | - | 88 | 4,395,915 | 49,954 |
| 50-54 | 13 | 17 | 21 | 9 | 5 | 10 | 7 | - | - | 82 | 4,487,147 | 54,721 |
| 55-59 | 4 | 13 | 22 | 6 | 4 | 8 | 4 | 6 | 2 | 69 | 3,503,775 | 50,779 |
| 60-64 | 4 | 5 | 11 | 11 | 4 | 1 | 4 | 5 | 2 | 47 | 2,941,411 | 62,583 |
| 65-69 | 3 | 1 | 2 | 2 | 1 | 3 | 2 | 1 | 1 | 16 | 782,103 | 48,881 |
| 70-74 | 1 | - | 2 | - | - | 1 | - | - | - | 4 | 208,404 | 52,101 |
| 75-79 | - | - | - | - | - | - | - | - | - | - | - | - |
| 80-84 | - | - | - | - | - | - | - | - | - | - | - | - |
| 85+ | - | - | - | - | - | - | - | - | - | - | - | - |
| TOTAL | 133 | 87 | 95 | 60 | 29 | 30 | 18 | 12 | 5 | 469 | \$ 24,485,565 | \$ 52,208 |

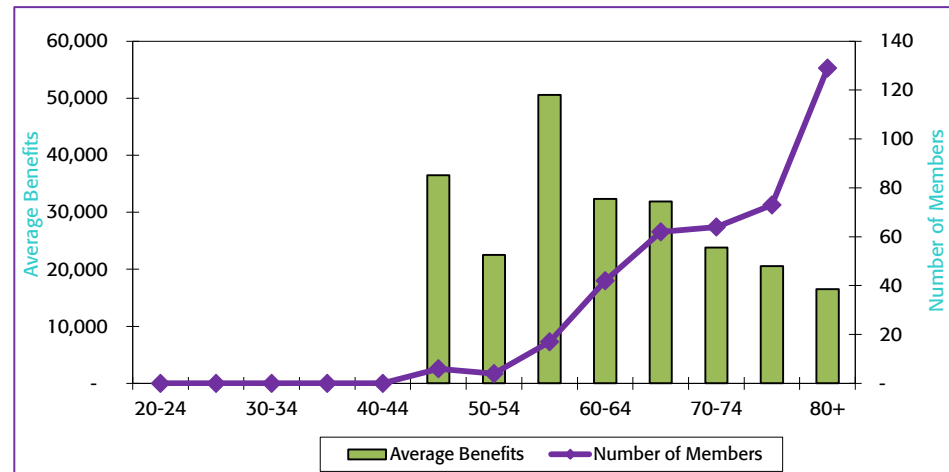


Distribution of Plan Members as of January 1, 2014
Retired Members

| Retired Members and Beneficiaries | | | |
|-----------------------------------|------------|------------------|---------------------|
| Age | Number | Average Benefit | Total Benefit |
| 20-24 | - | - | - |
| 25-29 | - | - | - |
| 30-34 | - | - | - |
| 35-39 | - | - | - |
| 40-44 | - | - | - |
| 45-49 | 2 | 36,246 | 72,492 |
| 50-54 | 4 | 22,513 | 90,052 |
| 55-59 | 13 | 48,773 | 634,052 |
| 60-64 | 37 | 31,252 | 1,156,306 |
| 65-69 | 58 | 32,365 | 1,877,188 |
| 70-74 | 62 | 23,548 | 1,459,972 |
| 75-79 | 70 | 20,181 | 1,412,699 |
| 80+ | 123 | 16,213 | 1,994,192 |
| TOTAL | 369 | \$ 23,569 | \$ 8,696,954 |

| Disabled Members | | | |
|------------------|-----------|------------------|-------------------|
| Age | Number | Average Benefit | Total Benefit |
| 20-24 | - | - | - |
| 25-29 | - | - | - |
| 30-34 | - | - | - |
| 35-39 | - | - | - |
| 40-44 | - | - | - |
| 45-49 | 4 | 36,618 | 146,472 |
| 50-54 | - | - | - |
| 55-59 | 4 | 56,442 | 225,767 |
| 60-64 | 5 | 40,589 | 202,944 |
| 65-69 | 4 | 24,765 | 99,059 |
| 70-74 | 2 | 31,899 | 63,797 |
| 75-79 | 3 | 29,514 | 88,543 |
| 80+ | 6 | 22,491 | 134,948 |
| TOTAL | 28 | \$ 34,340 | \$ 961,531 |

| Total | | | |
|--------------|------------|------------------|---------------------|
| Age | Number | Average Benefit | Total Benefit |
| 20-24 | - | - | - |
| 25-29 | - | - | - |
| 30-34 | - | - | - |
| 35-39 | - | - | - |
| 40-44 | - | - | - |
| 45-49 | 6 | 36,494 | 218,965 |
| 50-54 | 4 | 22,513 | 90,052 |
| 55-59 | 17 | 50,578 | 859,819 |
| 60-64 | 42 | 32,363 | 1,359,250 |
| 65-69 | 62 | 31,875 | 1,976,248 |
| 70-74 | 64 | 23,809 | 1,523,770 |
| 75-79 | 73 | 20,565 | 1,501,242 |
| 80+ | 129 | 16,505 | 2,129,140 |
| TOTAL | 397 | \$ 24,329 | \$ 9,658,485 |



Benefits shown are net of State reimbursed COLA.

Valuation Methodology

Stone Consulting, Inc. used the Entry Age Normal actuarial funding method in this actuarial valuation. The use of the Entry Age Normal actuarial funding method is consistent with the requirements of Chapter 32 of the Massachusetts General Laws.

NORMAL COST

| Valuation Date | January 1, 2014 | % of Payroll* |
|---|--------------------|---------------|
| Gross Normal Cost (GNC) | \$3,164,384 | 12.9% |
| Employees Contribution | <u>\$2,199,710</u> | <u>9.0%</u> |
| Net Normal Cost (NNC) | \$964,674 | 3.9% |
| Adjusted to Beginning of Fiscal Year 2016 | \$62,147 | |
| Administrative Expense | <u>\$0</u> | N/A |
| Adjusted Net Normal Cost | \$1,026,821 | |

*Payroll paid in 2013 for employees as of January 1, 2014 is \$24,485,565. Payroll for new hires in 2013 was annualized.

- The gross normal cost (GNC) is the “price” of benefits accruing in the current year if the assumptions underlying the normal cost were realized.
- An individual normal cost represents that part of the cost of a member’s future benefits that are assigned to the current year as if the costs are to remain level as a percentage of the member’s pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and withdrawals) are included in this calculation.
- Anticipated employee contributions to be made during the year are subtracted from the GNC to determine employer normal cost, or net normal cost (NNC).
- Administrative expenses were not added to the NNC. Unlike most Chapter 32 systems, the administrative expenses are reimbursed to the system by the units. Therefore we have not included them as part of the development of the normal cost or the appropriation. The administrative expense does not include investment manager and custodial fees. These fees are considered part of the interest rate assumption that is net of fees.

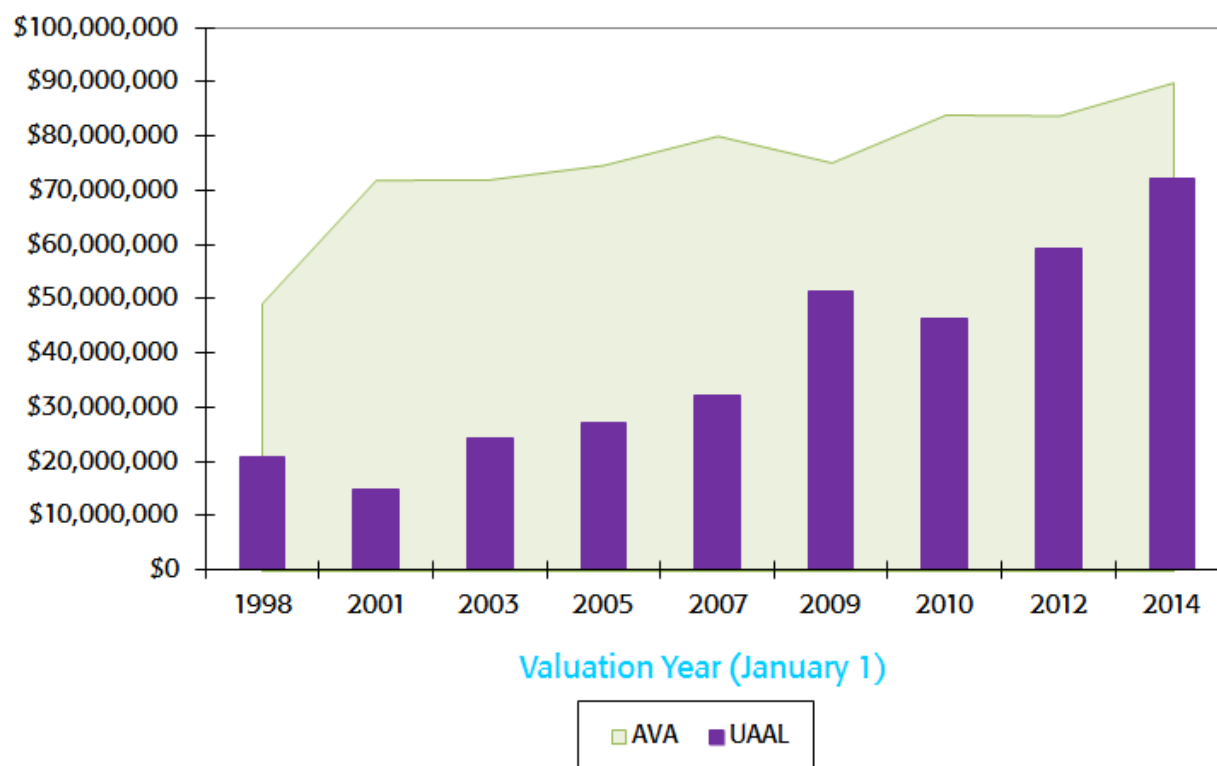
Actuarial Accrued Liability and Funded Status

| | January 1, 2014 | Percentage Change |
|--|--------------------------|----------------------|
| Active Actuarial Accrued Liability | | |
| Superannuation \$63,906,936 | | |
| Death 1,500,199 | | |
| Disability 4,071,608 | | |
| Withdrawal 511,433 | | |
| Total | \$69,990,176 | 5.2% |
| Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability | | |
| Retirees and Beneficiaries \$81,043,896 | | |
| Disabled 10,266,383 | | |
| Inactive 899,322 | | |
| Total | <u>92,209,601</u> | 20.3% |
| Total Actuarial Accrued Liability (AAL) | \$162,199,777 | 13.3% |
| Actuarial Value of Assets (AVA) | <u>89,955,182</u> | 7.2% |
| Unfunded Actuarial Accrued Liability | \$72,244,594 | 21.9% |
| Funded Ratio (AVA / AAL) | | |
| 2014 (8.00% interest rate): | 55% | |
| 2012 (8.00% interest rate): | 59% | |

- Actuarial Accrued Liability (AAL) is the “price” of benefits attributable to benefits earned in past years, or in other words, represents today’s value of all benefits earned by active and inactive members.
- The total AAL is \$162,199,777. This along with an actuarial value of assets of \$89,955,182 produces a funded status of 55%. This compares to a funded status of 59% for the 2012 valuation.

The chart on the following page is a history of the unfunded actuarial accrued liability (UAAL) and the valuation assets (AVA) over the course of the past nine actuarial valuations.

History of Actuarial Valuation of Assets (AVA) and Unfunded Actuarial Accrued Liability (UAAL)



| | PRIT Test Assumption | Valuation Assumption |
|-----------------------------|---------------------------|---|
| Interest Rate | 8.25% | 8.00% |
| Ultimate Salary Increase | | |
| Groups 1 and 2 | 3.25% | 4.00% |
| Group 4 | 3.50% | 4.25% |
| Mortality | RP2000 without projection | RP2000 projected with Generational and Scale BB |
| Asset Valuation | Market Value | 5 Year asset Smoothing |
| Actuarial Accrued Liability | \$146,853,514 | \$162,199,777 |
| Actuarial Value of Assets | \$95,543,806 | \$89,955,182 |
| Funding Ratio | 65.06% | 55.46% |

Development of Funding Schedule

| | |
|--|------------------|
| Net Employer Normal Cost for Fiscal 2016 | \$1,026,821 |
| Net 3(8)(c) payments | 312,536 |
| Amortization | <u>4,456,880</u> |
| Total Appropriation required for Fiscal 2016 | \$5,796,237 |

- The funding schedule is composed of the normal cost, the net 3(8)(c) payments and the amortization of the actuarial accrued unfunded liability. The contribution is assumed to be made at the beginning of the fiscal year.
- The 3(8)(c) payments is the net of payments made to or from different Chapter 32 Retirement Systems to reflect benefits paid due to service either with the Danvers Retirement System or other Chapter 32 Retirement Systems.
- The contribution amount for Fiscal 2016 is \$5,796,237. The funding schedule is presented on page 11. The schedule's length is twenty-one (21) years (for the fresh start base) which is the same as the January 1, 2012 valuation remaining schedule's length. The maximum funding schedule length allowed by Section 22F of Chapter 32 of the Massachusetts General Laws is twenty-five years to Fiscal 2040.
- In developing the funding schedule, we used a fresh start approach in which the unfunded actuarial accrued liability (UAAL) is reamortized instead of maintaining the existing amortization amount and separately amortizing the actuarial gain or loss. The use of a fresh-start approach can result in a funding schedule in which the changes in contribution amounts from year to year are more consistent. The amortization is adjusted each year to maintain an 8% increase in the total contribution through fiscal year 2018. The contribution amount for FY 2019 and beyond is based on 4% amortization increases the next 18 years. Payments are further adjusted to reflect known deferred asset gains in FY 2018 and FY 2020.

DANVERS RETIREMENT SYSTEM FUNDING SCHEDULE

| Fiscal Year | Normal Cost | Unfunded Liability | Funding Amortization of UAL | Net 3(8)(c) Payments | Schedule Contribution | % change from prior year |
|-------------|-------------|--------------------|-----------------------------|----------------------|-----------------------|--------------------------|
| 2016 | 1,026,821 | 77,121,174 | 4,456,880 | 312,536 | 5,796,237 | 8.00% |
| 2017 | 1,070,461 | 78,477,438 | 4,876,939 | 312,536 | 6,259,936 | 8.00% |
| 2018 | 1,115,955 | 77,441,146 | 5,332,239 | 312,536 | 6,760,731 | 8.00% |
| 2019 | 1,163,384 | 77,877,619 | 5,850,130 | 312,536 | 7,326,050 | 8.36% |
| 2020 | 1,212,827 | 74,535,733 | 5,829,635 | 312,536 | 7,354,998 | 0.40% |
| 2021 | 1,264,373 | 74,202,586 | 6,062,820 | 312,536 | 7,639,729 | 3.87% |
| 2022 | 1,318,108 | 73,590,947 | 6,305,333 | 312,536 | 7,935,978 | 3.88% |
| 2023 | 1,374,128 | 72,668,463 | 6,557,547 | 312,536 | 8,244,211 | 3.88% |
| 2024 | 1,432,528 | 71,399,789 | 6,819,848 | 312,536 | 8,564,913 | 3.89% |
| 2025 | 1,493,411 | 69,746,336 | 7,092,642 | 312,536 | 8,898,589 | 3.90% |
| 2026 | 1,556,881 | 67,665,989 | 7,376,348 | 312,536 | 9,245,765 | 3.90% |
| 2027 | 1,623,048 | 65,112,813 | 7,671,402 | 312,536 | 9,606,986 | 3.91% |
| 2028 | 1,692,028 | 62,036,723 | 7,978,258 | 312,536 | 9,982,822 | 3.91% |
| 2029 | 1,763,939 | 58,383,143 | 8,297,388 | 312,536 | 10,373,863 | 3.92% |
| 2030 | 1,838,906 | 54,092,615 | 8,629,284 | 312,536 | 10,780,726 | 3.92% |
| 2031 | 1,917,060 | 49,100,397 | 8,974,455 | 312,536 | 11,204,051 | 3.93% |
| 2032 | 1,998,535 | 43,336,017 | 9,333,433 | 312,536 | 11,644,504 | 3.93% |
| 2033 | 2,083,473 | 36,722,791 | 9,706,771 | 312,536 | 12,102,780 | 3.94% |
| 2034 | 2,172,020 | 29,177,301 | 10,095,042 | 312,536 | 12,579,598 | 3.94% |
| 2035 | 2,264,331 | 20,608,841 | 10,498,843 | 312,536 | 13,075,710 | 3.94% |
| 2036 | 2,360,565 | 10,918,797 | 10,918,797 | 312,536 | 13,591,898 | 3.95% |
| 2037 | 2,460,889 | - | - | 312,536 | 2,773,425 | |

Amortization of Unfunded Liability as of July 1, 2015

| Year | Type | Original Amort. Amount | Percentage Increasing | Original # of Years | Current Amort. Amount | Years Remaining |
|------|-------------|------------------------|-----------------------|---------------------|-----------------------|-----------------|
| 2016 | Fresh Start | N/A | 4.00% | 21 | N/A | 21 |

Notes on Amortization of Unfunded Liability

Year is the year the amortization base was established.

Type is the reason for the creation of the base. Examples are Gain/(Loss) or Fresh Start.

Original Amortization Amount is the annual amortization amount when the base was established.

Percentage Increasing is the percentage that the Original Amortization Amount increases per year.

Original # of Years is the number of years over which the base is being amortized.

Current Amortization Amount is the amortization payment amount for this year.

Years Remaining is the number of years left to amortize the base.

***Fresh Start amortization** is set to be the amount needed to result in an adjusted payment which is 8% higher than the prior fiscal year for the next 3 years with 4% amortization increases thereafter for 18 years which results in a contribution which is 8.36% higher in year 4

****Include recognition of deferred gains/(losses):**

2018 : \$2,047,393

2020 : \$3,253,955

Assumptions and Methodology Summary

The principal actuarial assumptions used in this valuation are the same as the assumptions used in the previous valuation, except where noted, and are summarized in the following table:

| Valuation Date | January 1, 2014 Valuation | | | | | | | | | | |
|------------------------|---|------------|--|----------|------------|----------------|-----|-----|---------|-----|-----|
| Interest Rate | 8.00% | | | | | | | | | | |
| Salary Increase | 4.25% (approximate – select and ultimate) | | | | | | | | | | |
| COLA | 3% of \$12,000 | | | | | | | | | | |
| COLA Frequency | Granted every year | | | | | | | | | | |
| Mortality | RP-2000 table (sex distinct, healthy employees for actives and healthy annuitants for retirees) projected with scale BB and Generational Mortality. For members retired under an Accidental Disability (job-related), 40% of deaths are assumed to be from the same cause as the disability. Disabled mortality is the healthy retiree table ages set forward 2 years. <i>(Prior valuation used RP2000 projected 17 years with scale AA.)</i> | | | | | | | | | | |
| Overall Disability | <table border="1"> <thead> <tr> <th></th><th>Ordinary</th><th>Accidental</th></tr> </thead> <tbody> <tr> <td>Groups 1 and 2</td><td>45%</td><td>55%</td></tr> <tr> <td>Group 4</td><td>10%</td><td>90%</td></tr> </tbody> </table> | | | Ordinary | Accidental | Groups 1 and 2 | 45% | 55% | Group 4 | 10% | 90% |
| | Ordinary | Accidental | | | | | | | | | |
| Groups 1 and 2 | 45% | 55% | | | | | | | | | |
| Group 4 | 10% | 90% | | | | | | | | | |
| Retirement Rates | Groups 1 and 2: Ages 55 – 70, Group 4: Ages 50 – 65 Post April 1, 2012 Hires: Groups 1 and 2: Ages 60 – 70, Group 4: Ages 50 – 65 | | | | | | | | | | |
| Administrative Expense | Paid separately by the Town. | | | | | | | | | | |

Assets

| | | |
|----|------------------------------------|---------------------|
| a. | Cash | \$5,046,827.87 |
| b. | Fixed Income Securities | 12,236,246.43 |
| c. | Equities | 30,858,084.92 |
| d. | Pooled Domestic Equity Funds | 6,651,597.64 |
| e. | Pooled International Equity Funds | 16,498,471.00 |
| f. | Pooled Domestic Fixed Income Funds | 2,472,879.00 |
| g. | Pooled Alternative Investments | 13,504,265.25 |
| h. | Pooled Real Estate Funds | 2,443,731.00 |
| i. | Hedge Funds | <u>5,313,666.55</u> |
| j. | Sub-Total: | \$95,025,769.66 |
| k. | Interest Due and Accrued | \$105,829.03 |
| l. | Accounts Receivable | 474,947.86 |
| m. | Accounts Payable | <u>(62,740.43)</u> |
| n. | Sub-Total: | \$518,036.46 |
| o. | Market Value of Assets [(j) + (n)] | \$95,543,806.12 |

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2013 (adjusted for payables and receivables) is \$95,543,806.12.
- The asset allocation as of December 31, 2013 was approximately 19% cash, receivables, payables and fixed income and 79% equities, alternative investments, hedge funds and real estate.
- Historically, 10 to 11% has been the expected long-term rate of return for equities, and 6% to 7% has been the expected long-term rate of return for fixed income securities. Many economists and investment professionals are projecting lower returns of 7.00% to 8.50% for domestic equities, 8.25% to 8.50% for international equities, 9.50% for emerging markets, 8.00% for hedge funds, 10% for venture capital, 6.00% for real estate and 4.50% for core fixed income securities. In light of these projections, as well as historical investment returns, the 8.00% interest rate assumption is within the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.

Calculation of Valuation Assets

1. Market value of assets including receivable/payable as of 01/01/2014 \$95,543,806

2. Phase-in of asset gains and losses

| | Plan Year (1) | Original Amount (2) | Percent Unrecognized (3) | Amount Unrecognized (2) x (3) |
|----|---------------------|---------------------------|--------------------------------|-------------------------------------|
| a. | 2013 | \$9,302,228 | 80% | \$7,441,782 |
| b. | 2012 | \$2,310,351 | 60% | \$1,386,210 |
| c. | 2011 | (\$10,449,124) | 40% | (\$4,179,650) |
| d. | 2010 | \$4,701,403 | 20% | \$940,281 |
| e. | 2009 | \$10,376,056 | 0% | \$0 |
| f. | 2008 | (\$30,878,457) | 0% | \$0 |
| g. | Total | | | \$5,588,624 |

3. Valuation assets without corridor as of 01/01/2014 \$89,955,182
(1. - 2.g.)

4. Corridor Check

a. 85% of Market Value \$81,212,235
b. 115% of Market Value \$109,875,377

5. Valuation assets with corridor as of 01/01/2014 \$89,955,182
3. within Corridor

6. Calculation of return on valuation assets

a. Valuation assets as of 01/01/2012 83,875,130
b. ER contribs + EE contribs - Ben Pymts - Expenses (4,879,690)
c. Actual return on valuation assets \$10,816,950
5. - (6.a. + 6.b.)
d. Weighted value of valuation assets \$81,666,129
e. Return on valuation assets 13.2%
6.c. / 6.d.

Disclosure Information Under GASB Statement 25

SCHEDULES OF FUNDING PROGRESS (Dollars In Thousands)

| Actuarial Valuation Date | Actuarial Value of Assets A | Actuarial Accrued Liability B | Unfunded AAL (UAAL) B-A | Funded Ratio A/B | Covered Payroll C | UAAL as a % of Covered Payroll (B-A)/C |
|--------------------------|-----------------------------|-------------------------------|-------------------------|------------------|-------------------|--|
| 1/1/2014 | \$89,955 | \$162,200 | \$72,245 | 55% | \$24,486 | 295% |
| 1/1/2012 | \$83,875 | \$143,155 | \$59,280 | 59% | \$22,911 | 259% |
| 1/1/2010 | \$84,018 | \$130,372 | \$46,354 | 64% | \$23,028 | 201% |
| 1/1/2009 | \$75,218 | \$126,645 | \$51,427 | 59% | \$22,650 | 227% |
| 1/1/2007 | \$80,142 | \$112,391 | \$32,250 | 71% | \$20,383 | 158% |

Notes to Schedules

Additional information as of the latest actuarial valuation follows:

| | |
|-------------------------------|--|
| Valuation date | 1/1/2014 |
| Actuarial cost method | Entry Age Normal |
| Amortization method | Closed - Approximate level percent of payroll |
| Remaining amortization period | 21 years for the fresh start base |
| Asset valuation method | Market value adjusted by accounts payable and receivables adjusted to phase in over 5 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value. Market value of assets is \$95,543,806. |

Actuarial Assumptions

| | |
|----------------------------|---|
| Investment rate of return | 8.00% per year |
| Projected salary increases | Group 1 & 2 - 4.00% plus 4.00% steps yrs. 1-3 Group 4 - 4.50% plus steps: Police - 13.66% yrs. 1-2, 2.99% yr. 5 and 4.11% yr. 25 Fire - 4.74% yr. 1, 3.02% yr 8 Base rate is reduced by .5% for years in which steps apply Base rate is modified for 2014 and 2015 to 3% |

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2014

| | | |
|---|-------------|-----------------|
| The normal cost for employees on that date was: | \$2,199,710 | 9.0% of payroll |
| The normal cost for the employer was: | \$964,674 | 3.9% of payroll |

| | | |
|---|---------------------|--------------------|
| The actuarial liability for active members was: | \$69,990,176 | |
| The actuarial liability for retired members was (includes inactives): | \$92,209,601 | |
| Total actuarial accrued liability: | \$162,199,777 | |
| System assets as of that date: | <u>\$89,955,182</u> | (\$95,543,806 MVA) |
| Unfunded actuarial accrued liability: | \$72,244,594 | |

| | |
|--|-----|
| The ratio of system's assets to total actuarial liability was: | 55% |
|--|-----|

| | |
|---|--------------|
| As of that date the total covered employee payroll was: | \$24,485,565 |
|---|--------------|

The principal actuarial assumptions used in the valuation are as follows:

| | |
|--------------------------|---------------------|
| Investment Return: | 8.00% per annum |
| Rate of Salary Increase: | Select and ultimate |

SCHEDULE OF FUNDING PROGRESS (Dollars in \$1,000's)

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|--------------------------|-------------------------------|---------------------------------------|---------------------------|--------------------|---------------------|--|
| 1/1/2014 | \$89,955 | \$162,200 | \$72,245 | 55% | \$24,486 | 295% |
| 1/1/2012 | \$83,875 | \$143,155 | \$59,280 | 59% | \$22,911 | 259% |
| 1/1/2010 | \$84,018 | \$130,372 | \$46,354 | 64% | \$23,028 | 201% |
| 1/1/2009 | \$75,218 | \$126,645 | \$51,427 | 59% | \$22,650 | 227% |
| 1/1/2007 | \$80,142 | \$112,391 | \$32,250 | 71% | \$20,383 | 158% |

Actuarial Methods and Assumptions

ACTUARIAL METHODS

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method has been used in this valuation. Under this method, the normal cost is the amount calculated as the level percentage of compensation necessary to fully fund the prospective benefits from each member's entry age to retirement age.

The actuarial accrued liability represents the theoretical accumulation of all prior years' normal costs for the plan members as if the program had always been in effect. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over plan assets.

Asset Valuation Method

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a five-year rolling period. The phase-in is 20% for year one, 40% for year two, 60% for year three, 80% for year four and 100% for year five. The actuarial value of assets may be no less than 85%, or more than 115% of the market value of assets plus payables and receivables.

Fiscal Year Adjustment

The actuarial results are adjusted by the valuation interest rate and salary scale to the beginning of Fiscal Year 2016. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

ACTUARIAL ASSUMPTIONS

Investment Return

8.00% per year net of investment expenses.

Salary Increases

- Group 1 & 2 - 4.00% plus 3.50% steps yrs. 1-5
- Group 4 - 4.25% plus 3.50% steps yrs. 1-4
 - Base rate is reduced by .5% for years in which steps apply
 - Base rate is modified for 2014 and 2015 to 3%

Actuarial Methods and Assumptions (Continued)

Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates are set to zero if the retirement rate at that age is nonzero.

Rate of Withdrawal

| Service | Group 1 and 2 | Group 4 |
|---------|---------------|---------|
| 0 | 15% | 1.5% |
| 1 | 12% | 1.5% |
| 2 | 10% | 1.5% |
| 3 | 9% | 1.5% |
| 4 | 8% | 1.5% |
| 5 | 7.6% | 1.5% |
| 10 | 5.4% | 1.5% |
| 15 | 3.3% | 0.0% |
| 20 | 2.0% | 0.0% |
| 25 | 1.0% | 0.0% |
| 30+ | 0.0% | 0.0% |

Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability:

Rate of Disability

| Age | Group 1 and 2 | Group 4 |
|-----|---------------|---------|
| 20 | 0.01% | 0.10% |
| 25 | 0.02% | 0.20% |
| 30 | 0.03% | 0.30% |
| 35 | 0.06% | 0.30% |
| 40 | 0.10% | 0.30% |
| 45 | 0.15% | 1.00% |
| 50 | 0.19% | 1.25% |
| 55 | 0.24% | 1.20% |
| 60 | 0.28% | 0.85% |

Disability is assumed to be 45% ordinary and 55% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.

Actuarial Methods and Assumptions (Continued)

Rates of Retirement

The rates shown at the following ages illustrate the assumption regarding the incidence of retirement. A member would need to be eligible for the benefit to be assumed to retire. See Summary of Principal Provisions Number 5 for eligibility requirements.

| Age | Group 1 & 2 Male | Group 1 & 2 Female | Group 4 | Hired after 4/1/2012 | | |
|-----|------------------|--------------------|---------|----------------------|--------------------|---------|
| | | | | Group 1 & 2 Male | Group 1 & 2 Female | Group 4 |
| 50 | 1% | 1.5% | 2% | 0% | 0% | 1.5% |
| 51 | 1% | 1.5% | 2% | 0% | 0% | 1.5% |
| 52 | 1% | 2.0% | 2% | 0% | 0% | 1.5% |
| 53 | 1% | 2.5% | 2% | 0% | 0% | 1.5% |
| 54 | 2% | 2.5% | 7.5% | 0% | 0% | 5% |
| 55 | 2% | 5.5% | 15% | 0% | 0% | 10% |
| 56 | 2.5% | 6.5% | 10% | 0% | 0% | 7% |
| 57 | 2.5% | 6.5% | 10% | 0% | 0% | 20% |
| 58 | 5% | 6.5% | 10% | 0% | 0% | 10% |
| 59 | 6.5% | 6.5% | 15% | 0% | 0% | 15% |
| 60 | 12% | 5% | 20% | 25% | 30% | 20% |
| 61 | 20% | 13% | 20% | 20% | 13% | 20% |
| 62 | 30% | 15% | 25% | 30% | 15% | 25% |
| 63 | 25% | 12.5% | 25% | 25% | 12.5% | 25% |
| 64 | 22% | 18% | 30% | 22% | 18% | 30% |
| 65 | 40% | 15% | 100% | 40% | 15% | 100% |
| 66 | 25% | 20% | N/A | 25% | 20% | N/A |
| 67 | 25% | 20% | N/A | 25% | 20% | N/A |
| 68 | 30% | 25% | N/A | 30% | 25% | N/A |
| 69 | 30% | 20% | N/A | 30% | 20% | N/A |
| 70 | 100% | 100% | N/A | 100% | 100% | N/A |

Mortality

The RP-2000 mortality table (sex-distinct) projected with scale BB and Generational Mortality. *(Prior valuation used RP-2000 mortality table projected 17 years with scale AA.)* During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used.

Disabled Life Mortality

The RP-2000 mortality table for healthy annuitants (sex-distinct) projected with scale BB and Generational Mortality set-forward by 2 years. Death is assumed to be due to the same cause as the disability 40% of the time. *(Prior valuation used RP-2000 mortality table projected 17 years with scale AA.)*

Actuarial Methods and Assumptions (Continued)

Regular Interest Rate Credited to Annuity Savings Account

2% per year.

Family Composition

Members assumed married with 2 dependent children – one male and one female both age 15; age difference between member and spouse assumed to be 3 years (the male being the older).

Cost-of-Living Increases

A 3% COLA on the first \$12,000 of a member's retirement allowance is assumed to be granted every year.

Administrative Expenses

Paid separately by Town

Step Increases

Step increases are assumed to be part of the salary increase assumption.

Credited Service

All service is assumed to be due to employment with the municipality.

3(8)(c)

Net 3(8)(c) payments are added to the contribution amount, they have not been included in the Accrued Liability. They are assumed to remain constant.

Contribution Timing

Contributions are assumed to be made semi-annually.

Municipality

Refers to the various employers that comprise the Retirement System.

Valuation Date

January 1, 2014.

Actuarial Methods and Assumptions (Continued)

PRIT Test

Above assumptions were used for the 65% test with the exception of:

| | PRIT Test Assumption | Valuation Assumption |
|--------------------------|---------------------------|---|
| Interest Rate | 8.25% | 8.00% |
| Ultimate Salary Increase | | |
| Groups 1 and 2 | 3.25% | 4.00% |
| Group 4 | 3.50% | 4.25% |
| Mortality | RP2000 without projection | RP2000 projected with Generational and Scale BB |
| Asset Valuation | Market Value | 5 Year asset Smoothing |

Summary of Principal Provisions

1. PARTICIPANT

Participation is mandatory for all full-time employees whose employment commences before age 65. There are three classes of members in the retirement system:

- Group 1: general employees
- Group 2: employees in specified hazardous occupations (e.g., electricians)
- Group 4: police and firefighters

2. MEMBER CONTRIBUTIONS

Member contributions vary depending upon date hired as follows:

| Date of Hire | Member Contribution Rate |
|----------------------|--------------------------|
| Prior to 1975 | 5% of Pay |
| 1975 – 1983 | 7% of Pay |
| 1984 – June 30, 1996 | 8% of Pay |
| After June 30, 1996 | 9% of Pay |

Members hired after 1978 contribute an additional 2% of pay over \$30,000.

3. PAY

a. Pay

Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay, and other similar compensation.

b. Average Pay

The average of pay during the three consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. For members hired after April 1, 2012, five-year averages will be used.

4. CREDITED SERVICE

Period during which an employee contributes to the retirement system plus certain periods of military service and “purchased” service.

5. SERVICE RETIREMENT

a. Eligibility

Completion of 20 years of credited service or attainment of age 55 and completion of 10 years of credited service. If hired prior to 1978 or a member of group 4, attainment of age 55.

Summary of Principal Provisions (Continued)

b. Retirement Allowance

Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance of 80% of average pay):

| Benefit Percentage | Group 1 | Group 2 | Group 4 |
|----------------------------|---------|---------|---------|
| 2.5% | 65+ | 60+ | 55+ |
| 2.4 | 64 | 59 | 54 |
| 2.3 | 63 | 58 | 53 |
| 2.2 | 62 | 57 | 52 |
| 2.1 | 61 | 56 | 51 |
| 2.0 | 60 | 55 | 50 |
| 1.9 | 59 | N/A | 49 |
| 1.8 | 58 | N/A | 48 |
| 1.7 | 57 | N/A | 47 |
| 1.6 | 56 | N/A | 46 |
| 1.5 | 55 | N/A | 45 |
| Hired after April 1, 2012* | | | |
| 2.5% | 67+ | 62+ | 57+ |
| 2.35 | 66 | 61 | 56 |
| 2.20 | 65 | 60 | 55 |
| 2.05 | 64 | 59 | 54 |
| 1.90 | 63 | 58 | 53 |
| 1.75 | 62 | 57 | 52 |
| 1.60 | 61 | 56 | 51 |
| 1.45 | 60 | 55 | 50 |

*Reduction is .125% for each year early instead of .15% per year for employees with over 30 years of service.

In addition, veterans receive an additional \$15 per year for each year of credited service up to 20 years

6. DEFERRED VESTED RETIREMENT

a. Eligibility

Completion of 10 years of credited service (for elected and appointed members, 6 years in the event of involuntary termination).

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section above with the member eligible to start collecting a benefit at age 55, (or age 57 for post-April 1, 2012 hires) or defer until later at his or her discretion. If a member chooses, his or her contributions with interest may be withdrawn. The amount of interest he or she will receive depends on length of service and whether or not the termination of employment was voluntary.

Summary of Principal Provisions (Continued)

7. ORDINARY DISABILITY RETIREMENT

a. Eligibility

Non-job related disability after completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section and calculated as if the member had attained age 55 (or age 57 for those hired after April 1, 2012), if younger. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.

8. ACCIDENTAL DISABILITY RETIREMENT

a. Eligibility

Disabled as a result of an accident in the performance of duties. No age or service requirement.

b. Retirement Allowance

72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child. Total allowance not to exceed 100% of pay (75% for members hired after 1987).

9. NON-OCCUPATIONAL DEATH

a. Eligibility

Dies while in active service, but not due to occupational injury. 2 years of service.

b. Retirement Allowance

Benefit as if Option C had been elected (see below) and member had attained age 55 (or age 57 for those hired after April 1, 2012) if younger. Minimum monthly benefits provided as follows: spouse - \$500, first child - \$120, each additional child - \$90

10. OCCUPATIONAL DEATH

a. Eligibility

Dies as a result of an occupational injury.

Summary of Principal Provisions (Continued)

b. Benefit Amount

72% of pay plus refund of annuity savings fund balance. In the case of an accidental disability retiree who dies of the same cause, the beneficiary receives 72% of the last 12 months salary or the current pension amount, whichever is greater.

11. COST-OF-LIVING INCREASES

An increase of up to 3% applied to the first \$12,000 of annual benefit. Funded by the Municipality from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal 1998 are reimbursed by the Commonwealth.

12. OPTIONAL FORMS OF PAYMENT

▪ Option A

Allowance payable monthly for the life of the member.

▪ Option B

Allowance payable monthly for the life of the member with a guarantee of remaining member contributions with interest.

▪ Option C

Allowance payable monthly for the life of the member with 66-2/3% continuing to the member's beneficiary upon the member's death. If the beneficiary predeceases the member, the allowance amount "pops up" to the non-reduced amount.

Glossary of Terms

▪ Present Value of Benefits

Represents the dollar value today of all benefits expected to be earned by current members if all actuarial assumptions are exactly realized.

▪ Actuarial Cost Method

The procedure that is used to allocate the present value of benefits between the liability that is attributable to past service (Actuarial Accrued Liability) and that attributable to future service.

- **Actuarial Assumptions**

Estimates are made as to the occurrence of certain events that determine the level of benefits to be paid and how long they will be provided. The more important actuarial assumptions include the investment return on assets, salary increases and the rates of turnover, disability, retirement and mortality.

- **Actuarial Accrued Liability**

The portion of the Present Value of Benefits that is attributable to past service.

- **Normal Cost**

The portion of the Present Value of Benefits that is attributable to benefits to be earned in the coming year.

- **Actuarial Assets**

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a five-year rolling period. The phase-in is 20% for year one, 40% for year two, 60% for year three, 80% for year four and 100% for year five. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.

- **Unfunded Actuarial Accrued Liability**

That portion of the Actuarial Accrued Liability not covered by System Assets.

- **PERAC**

Public Employee Retirement Administration Commission, a division of the State government which has regulatory authority over the administration of the retirement system.

- **PRIT**

Pension Reserves Investment Trust Fund is the state controlled and administered fund for the investment of assets for members of the retirement system.

- **GASB**

Government Accounting Standards Board (issues guidance for disclosure of retirement system liabilities).



DANVERS RETIREMENT SYSTEM BREAKOUTS

| Breakouts - Actuarial Basis | | Total | Town | Housing Authority | School Lunch | Hospital | Electric | School | Water | Sewer |
|-----------------------------|--|--------------|--------------|----------------------|-----------------|-----------|-------------|-------------|-------------|-----------|
| (1) | Participants | | | | | | | | | |
| | Active | 469 | 244 | 8 | 13 | 0 | 42 | 136 | 23 | 3 |
| | Inactives | 79 | 17 | 1 | 1 | 2 | 2 | 53 | 2 | 1 |
| | Retirees | 369 | 173 | 9 | 16 | 73 | 29 | 57 | 11 | 1 |
| | Disabled Retirees | 28 | 23 | 0 | 1 | 1 | 0 | 0 | 2 | 1 |
| | Total | 945 | 457 | 18 | 31 | 76 | 73 | 246 | 38 | 6 |
| (2) | Payroll of Active Participants | \$24,485,565 | \$15,438,755 | \$471,296 | \$351,688 | \$0 | \$3,161,961 | \$3,565,162 | \$1,355,074 | \$141,628 |
| (3) | Normal Cost | | | | | | | | | |
| (a) | Total Normal Cost | 3,164,384 | 1,980,123 | 56,031 | 44,450 | 0 | 515,349 | 435,645 | 118,615 | 14,171 |
| (b) | Expected Employee Contributions | 2,199,710 | 1,375,415 | 45,749 | 29,830 | 0 | 297,363 | 313,716 | 124,227 | 13,410 |
| (c) | Net Employer Normal Cost | 964,674 | 604,708 | 10,282 | 14,620 | 0 | 217,986 | 121,929 | (5,612) | 761 |
| (d) | Interest on Net Normal Cost | 62,147 | 38,958 | 662 | 942 | 0 | 14,043 | 7,855 | (362) | 49 |
| (e) | Net Employer Normal Cost w Interest | 1,026,821 | 643,666 | 10,944 | 15,562 | 0 | 232,029 | 129,784 | (5,974) | 810 |
| (4) | (a) Active and Inactive Accrued Liability | 70,889,498 | 50,762,867 | 796,387 | 1,071,766 | 62,529 | 7,662,975 | 6,191,796 | 4,091,405 | 249,772 |
| | (b) Retiree and Disabled Accrued Liability | 91,310,279 | 59,555,586 | 1,855,580 | 1,355,646 | 6,605,938 | 11,263,363 | 7,214,947 | 3,037,984 | 421,235 |
| | (c) Actuarial Accrued Liability | 162,199,777 | 110,318,453 | 2,651,967 | 2,427,412 | 6,668,467 | 18,926,338 | 13,406,743 | 7,129,389 | 671,007 |
| (5) | Assets | 89,955,182 | 61,182,061 | 1,470,767 | 1,346,230 | 3,698,299 | 10,496,452 | 7,435,312 | 3,953,924 | 372,137 |
| (6) | Unfunded Actuarial Accrued Liability (UAAL) | 72,244,594 | 49,136,392 | 1,181,199 | 1,081,181 | 2,970,169 | 8,429,886 | 5,971,431 | 3,175,466 | 298,870 |
| (7) | Amortization* | 4,456,880 | 3,031,300 | 72,870 | 66,700 | 183,234 | 520,053 | 368,387 | 195,899 | 18,438 |
| (8) | Net 3(8)(c) payments** | 312,536 | 203,846 | 6,351 | 4,640 | 22,611 | 38,552 | 24,695 | 10,398 | 1,442 |
| (9) | Total Required Employer Contributions (3e)+(7)+(8) | 5,796,237 | 3,878,812 | 90,165 | 86,902 | 205,845 | 790,634 | 522,866 | 200,324 | 20,690 |
| (10) | Fiscal 2016 Cost | 5,796,237 | 3,878,812 | 90,165 | 86,902 | 205,845 | 790,634 | 522,866 | 200,324 | 20,690 |
| (11) | Fiscal 2017 Cost | 6,259,936 | 4,189,117 | 97,378 | 93,854 | 222,313 | 853,884 | 564,695 | 216,350 | 22,345 |
| (12) | Fiscal 2018 Cost | 6,760,731 | 4,524,246 | 105,168 | 101,362 | 240,098 | 922,195 | 609,871 | 233,658 | 24,133 |
| (13) | Fiscal 2019 Cost | 7,326,050 | 4,902,555 | 113,962 | 109,838 | 260,175 | 999,307 | 660,867 | 253,196 | 26,151 |
| (14) | Fiscal 2020 Cost | 7,354,998 | 4,921,927 | 114,412 | 110,272 | 261,203 | 1,003,256 | 663,478 | 254,196 | 26,254 |
| (15) | Percentage of Total Cost | 100.0% | 66.9% | 1.6% | 1.5% | 3.6% | 13.6% | 9.0% | 3.5% | 0.4% |

* Allocated on the basis of Unfunded Accrued Liability

** Allocated on the basis of Retiree and Disabled Accrued Liability